Ontario needs a green workforce to power shift from natural gas

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FULL TEXT

As stakeholders in Ontario’s energy sector stare down the complex challenge of transitioning to sustainable forms of electricity generation, one thing is clear: the road to a clean energy future will not be built unless there is a skilled workforce to pave it.

In January 2025, just before Premier Doug Ford called a snap election, Ontario's government allocated over $17 billion to energy projects, marking a significant investment in the province's energy future. This included the $10.9 billion Home Renovation Savings Program—a 12-year initiative touted as "the largest in Canadian history," to support homeowners with the installation of energy-efficient technologies such as heat pumps, solar panels, battery storage, and smart thermostats. Launched at the end of January, the program will cover 30 percent of costs of new windows, doors, insulation, heat pumps and rooftop solar panels as well as battery storage systems.

As more homeowners turn to sustainable energy solutions, the industry responsible for bringing these products to market and installing them will continue to grow.

From solar panel installers to wind turbine technicians, the clean energy revolution depends on people trained to build, operate, and maintain the new infrastructure. That’s where Ontario’s colleges are stepping in.

At George Brown College, new efforts are underway to address the labour shortage with two new affordable, online certificate programs, including the Solar Panel Installer and Solar Energy Technician program, designed to fast-track workers into the growing solar industry.

“With Canada facing a skilled trades gap of more than 85,000 workers by 2033, it’s crucial to create accessible pathways into high-demand industries like solar energy,” said Colin Simpson, Dean of the Centre for Continuous Learning at George Brown College.

Simpson told The Pointer that both programs are “flexible, self-paced, and fully online,” with courses covering both off-grid and grid-tied systems.

He says the Solar Panel Installer certificate focuses on system sizing and installation and is ideal for those entering the industry. The Solar Energy Technician covers advanced topics like system design, maintenance, permitting, and commercial-scale deployment.

These programs build on George Brown’s previous success with their Electric Vehicle Technician program, which Simpson says is now the largest of its kind globally. That experience inspired further expansion into clean energy education, including a wind turbine technician course launched last year.

“We’ve really focused on technology-based programming in the cleantech sector,” Simpson explained. “Our intention was always to cover both how clean electricity is generated, through wind and solar, and how it’s used, like in EVs.”

What sets these programs apart, he added, is the delivery model.

“Our training methodology is what makes us unique. All of our programs in this area use self-directed, on-demand learning—students learn at their own pace, on their own schedule. That flexibility removes barriers for working adults or those in remote areas.”

One of the most common concerns about online technical education is the perceived lack of hands-on experience.

“I’m not too sure about learning this kind of material online. Being in a classroom and learning in a more practical,

hands-on way just makes more sense to me," Darnell Stewart, a Toronto-based electrician who works on construction sites across the Greater Toronto Area, told The Pointer.

"I'd assume that if you're learning online, you'd probably end up in an apprenticeship-style job to gain experience. But I know in places like Hong Kong, they've turned to online training to help meet growing demand and close the skilled worker gap."

Simpson said this challenge is addressed through industry feedback as well as state-of-the-art simulation software that replicates real-world conditions, providing students with practical training and lifetime access to all course materials.

"In a traditional on-campus program, students spend half their time in labs or shop environments. What we've done is replicate that experience with simulation tools. Students can troubleshoot, test, and problem-solve virtually, gaining a deep understanding of how systems connect and function."

"We consulted with solar installation contractors, manufacturers, and utility partners," Simpson said. "We asked them: what do you need in a graduate? And we designed our programs around those answers."

For Simpson, the urgency is clear.

"Solar isn't the energy of the future—it's the energy of right now. The goal is for solar to generate over 50 percent of the world's electricity by 2050. We want Canada, and Ontario, to be part of that transformation."

The International Energy Agency (IEA) has forecasted that solar photovoltaic (PV) systems could account for up to 16 percent of global electricity by 2050, with concentrating solar power (CSP) plants contributing an additional 11 percent. These technologies could prevent over 6 billion tons of carbon dioxide emissions annually by 2050—equivalent to the total direct emissions from the global transport sector today.

Currently, Alberta and Saskatchewan are leading Canada's solar expansion, but Simpson hopes to see widespread adoption across the country.

"These programs are our way of helping Ontario catch up," he said. "We want to be part of the solution."

Experts are saying the PC government needs to recognize this shift and implement it into future plans. Despite the recent support from the Ford government for sustainable energy solutions, the PCs broad energy strategy has been widely criticized.

Nuclear energy remains a cornerstone of the Ford government's plan and continues to dominate discussions on clean energy—though experts have raised concerns over its sustainability and safety.

Nuclear power is a low-carbon energy source that generates a significant portion of the world's carbon-free electricity, but the way the PCs are managing expansion projects raises safety and sustainability concerns among experts.

"There's a reason why the oil and gas industry is cheering nuclear announcements—they know a nuclear plant is essentially just a gas plant," Keith Stewart, senior energy strategist at Greenpeace Canada, told The Pointer.

In many instances, natural gas serves as a 'bridge fuel' to facilitate the transition to nuclear power, helping to stabilize the grid by compensating for the variable nature of renewable energy sources such as wind and solar.

"Some gas fire generation will still be needed over the next decade, but we need to start investing in alternatives. And the good news is that we have a bunch of cost-effective solutions," Aakash Harpalani, The Atmospheric Fund's director of clean energy, explained.

"Energy efficiency, demand flexibility, investments in utility-scale, wind and solar, local generation, like rooftop solar, batteries…these are all technologies or resources that have been proven across the world and can help Ontario reduce its reliance on natural gas."

A recent report by the Ontario Clean Air Alliance reveals that power generated from new nuclear reactors will be up to eight times more expensive than electricity from onshore wind turbines. It will also cost nearly six times more than energy from solar farms and up to 2.7 times more than power from Great Lakes offshore wind, even with the 30 percent Investment Tax Credit.

Not only are natural gas and nuclear-generated power more costly, but a 2024 report from the Ontario Clean Air Alliance stated that by tripling wind and solar capacity and investing in energy efficiency and storage, Ontario could phase out gas power by 2035. In 2024, natural gas accounted for 16.3 percent of Ontario's electricity generation, a

striking increase from four percent in 2017. This upward trend is expected to continue.
According to procurement data from the Independent Electricity System Operator (IESO), clean storage projects cost just $672.32 per MW, while gas-fired generation costs a staggering $1,681.14 per MW.
A coalition of 35 Ontario municipalities, representing nearly 60 percent of the province’ s population, called on the provincial government to phase out gas-fired power by 2030—or sooner. But these calls have been largely overlooked.
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DETAILS

Subject:	Nuclear energy; Students; Solar energy; Energy industry; Clean technology; Carbon; Electricity generation; Skilled workers; Sustainability; Energy efficiency; Alternative energy sources; Cost control; Natural gas
Business indexing term:	Subject: Energy industry Skilled workers Cost control; Industry: 22111 : Electric Power Generation
Location:	Canada
Company / organization:	Name: International Energy Agency; NAICS: 541720, 926130, 928120; Name: George Brown College; NAICS: 611310
Classification:	22111: Electric Power Generation
Identifier / keyword:	Spare News
Publication title:	The Canadian Press; Toronto
Publication year:	2025
Publication date:	May 26, 2025
Publisher:	Canadian Press Enterprises Inc.
Place of publication:	Toronto
Country of publication:	Canada
Publication subject:	General Interest Periodicals--Canada
Source type:	Wire Feed
Language of publication:	English

Document type:	News
ProQuest document ID:	3212835454
Document URL:	https://www.proquest.com/canadiannews/wire-feeds/ontario-needs- green-workforce-power-shift-natural/docview/3212835454/sem-2?accountid=14656
Copyright:	2025 The Canadian Press. All rights reserved.
Last updated:	2025-05-28
Database:	Canadian Newsstream Collection

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